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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/891,165	06/26/2001	Shinichi Sato	P21149	1380
7055	7590	05/27/2004	EXAMINER	
GREENBLUM & BERNSTEIN, P.L.C. 1950 ROLAND CLARKE PLACE RESTON, VA 20191			HUNG, YUBIN	
			ART UNIT	PAPER NUMBER
			2625	5

DATE MAILED: 05/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/891,165

Applicant(s)

SATO ET AL.

Examiner

Yubin Hung

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06/26/01 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3.4.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 4 recites the limitation "said editing section" in line 2. There is insufficient antecedent basis for this limitation in the claim. (Examiner's comment: This problem will go away if claim 3 is changed to be dependent on claim 2.)

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3, 9, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over M. Sato (US 6,532,307), in view of Matsuura et al. (US 6,459,816).
6. Regarding claim 1, and similarly claim 9, M. Sato discloses

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- an orthogonal transform section that is configured to transform a block multi-bit image of a predetermined size into orthogonal transform coefficients corresponding to spatial frequencies that the block multi-bit image has
[Fig. 1, numeral 9; Fig. 2, numeral E1; Col. 3, lines 3-6]
- a quantizing section that is configured to quantize the orthogonal transform coefficients for each spatial frequency to obtain quantized data composed of a predetermined number of bits
[Fig. 2, numeral E2; Col. 3, lines 13-16]
- a banding section that is configured to rearrange the quantized data obtained in said quantizing section for each spatial frequency to generate bit serial data that the quantized data of a same spatial frequency band exists successively over adjacent blocks
[Fig. 2, numerals E1, E2; Col. 3, lines 5-9 and 16-18. Note that the banding is performed as part of the wavelet transform by E1. Note further that bit serialization is performed by the quantizer since quantized data of a sub-band is output as bit planes]
- a coding section that is configured to compress the bit serial data
[Fig. 2, numeral E3; Col. 3, lines 3-21]

M. Sato fails to disclose expressly that the transform section operates on a block (of the multi-bit image) of a predetermined size.

However, Matsuura et al. discloses decomposing an image into predetermined blocks and applies a transform to each block. [Fig. 25, numerals 2103, 2104; Col. 23, lines 50-55.]

M. Sato and Matsuura et al. are combinable because they are form the same field of endeavor of image compression.

At the time of the invention, it would be obvious to one of ordinary skill in the art to modify M. Sato with the teaching of Matsuura et al. by including an decomposing an image into predetermined blocks before applying a transform to each of the blocks. The

motivation would have been to enable efficient hardware implementation (of at least the transform unit) by optimizing the implementation to a specific block size.

Therefore, it would have been obvious to combine Matsuura et al. with M. Sato to obtain the invention of claim 1.

7. Regarding claim 2, Matsuura et al. further teaches

- an editing section that is configured to perform image editing on the quantized data obtained in said quantizing section for each block, wherein said banding section rearranges the edited quantized data for each spatial frequency
[Col. 3, lines 49-54. Note that while not expressly disclosed, it is inherent to have an editing section in order to carry out the editing and it is obvious for the banding section to be able to rearrange either the original quantized data or the edited data otherwise editing will only be a futile exercise]

8. Regarding claims 3, and similarly claim 10, M. Sato further discloses a decoder [Fig. 1, numeral 6; col. 4, lines 36-39] that processes *in the opposite order* of its corresponding encoder. Since the invention of claim 3 is an image processing apparatus that processes in the opposite order of the apparatus of claim 1, M. Sato clearly teaches Claim 3.

9. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over M. Sato (US 6,532,307) and Matsuura et al. (US 6,459,816) as applied to claims 1-3, 9-10 above, further in view of de Queiroz (US 6,175,653).

10. Regarding claim 4, Matsuura et al. further discloses

- said editing section controls a write address or a read address of a memory in which the quantized data is written corresponding to rotation control data indicative of a rotation amount and rotation direction of an image to rotate an arrangement of the image for each block [Col. 10, lines 22-27. Note that while not expressly disclosed, it is obvious that to perform a rotation, data indicatively of a rotation amount and a rotation direction have to be obtained]

M. Sato and Matsuura et al. fail to disclose/teach the following, which de Queiroz

teaches

- said block combining section controls a write address or a read address of a memory in which the restored block image is written corresponding to the rotation control data to rotate an image in the block for each block [Fig. 3, numeral 510; Col. 3, lines 59-62; Col. 6, lines 38-44]

M. Sato, Matsuura et al. and de Queiroz are combinable because they are form the same field of endeavor of image compression.

At the time of the invention, it would be obvious to one of ordinary skill in the art to modify M. Sato and Matsuura et al. with the teaching of de Queiroz by having a section where decompressed (i.e., restored) image blocks are rotated as they are being written to the output image buffer. The motivation would have been to improve the performance of rotation process by reducing its complexity, as pointed out in de Queiroz: p. 2, lines 15-17.

Therefore, it would have been obvious to combine de Queiroz with M. Sato and Matsuura et al. to obtain the invention of claim 4.

11. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over M. Sato (US 6,532,307), Matsuura et al. (US 6,459,816) and de Queiroz (US 6,175,653) as applied to claim 4 above, further in view of Ko (JP 2000-134459).

Regarding claim 5, M. Sato, Matsuura et al. and de Queiroz disclose/teach everything except the following, which Ko teaches

- an information adding section that is configured to add rotation information indicative of contents of rotation control for each page to the bit serial data of the image rotated in said editing section and an information detecting section that is configured to detect the rotation information from the decoded bit serial data
[Fig. 1, numeral 103; Fig. 2, numeral S3; P. 7, paragraph 0046. Note that given the multiple rotation amounts and directions, the existence of rotation-related information detection is inherent. Similarly, the existence of rotation-related information adding in the device generating the bit stream of the compressed image is obvious.]

M. Sato, Matsuura et al., de Queiroz and Ko are combinable because they are form the same field of endeavor of image compression.

At the time of the invention, it would be obvious to one of ordinary skill in the art to modify M. Sato, Matsuura et al. and de Queiroz with the teaching of Ko by having an information adding section to add rotation information indicative of contents of rotation control and an information detecting section to detect the rotation information. The

motivation would have been to improve the processing efficiency and flexibility by having all the necessary information needed to restore the original image in the same data stream (as opposed to having to , say, retrieve the rotation-related information from a separate file, which may be lost or misplaced).

Therefore, it would have been obvious to combine Ko with M. Sato, Matsuura et al. and de Queiroz to obtain the invention of claim 5.

12. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over M. Sato (US 6,532,307) and Matsuura et al. as applied to claims 1-3, 9-10 above, further in view of Parker et al. (US 6,307,962).

13. Regarding claim 6, M. Sato and Matsuura et al. disclose/teach everything except the following, which Parker et al. teaches

- said coding section codes image data according to a facsimile coding standards, and said decoding section decodes the image data according to a facsimile decoding system correspond to the facsimile coding standards
[Fig. 1, numeral 18; Col. 6, lines 52-56]

M. Sato, Matsuura et al. and Parker et al. are combinable because they are form the same field of endeavor of image compression.

At the time of the invention, it would be obvious to one of ordinary skill in the art to modify M. Sato and Matsuura et al. with the teaching of Parker et al. by using facsimile

coding/encoding for the coding and the encoding sections. The motivation would have been that they are especially efficient when processing binary data.

Therefore, it would have been obvious to combine Parker et al. with M. Sato and Matsuura et al. to obtain the invention of claim 6.

14. Claims 7, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over M. Sato (US 6,532,307) and Matsuura et al. as applied to claims 1-3, 9-10 above, further in view of Curry (US 5,710,636).

15. Regarding claim 7, M. Sato and Matsuura et al. disclose/teach everything except the following, which Curry teaches

- to perform half-tone processing on the multi-bit image data to obtain half-tone data
[Fig. 1, numerals 10, 14]
- a function selecting section selects the half-tone data or the bit serial data to input to said coding section corresponding to a function selecting signal for instructing a copy operation or facsimile transmission, wherein when the facsimile transmission is selected, said apparatus outputs the coded data to an outside
[Col. 4, line 56 - Col. 5, line 8. Note that it is inherent for a system to have an output selection function when different outputs are generated from the same input. Similarly, another selection inherently exists for selecting among different means (e.g., copiers, facsimile devices) to further process the selected output.]

M. Sato, Matsuura et al. and Curry are combinable because they are from the same field of endeavor of image compression.

At the time of the invention, it would be obvious to one of ordinary skill in the art to modify M. Sato and Matsuura et al. with the teaching of Curry by generating half-tone data, adding the ability to select either the half-tone data or the bit serial data to input corresponding to a function selecting signal for instructing an copy operation or facsimile transmission. The motivation would have been to be able to produce and compress input images to support different output means. (E.g., half-toning will allow a bi-level copier to produce copies that impart a grayscale appearance, as pointed out by Curry in Col. 1, lines 14-18).

Therefore, it would have been obvious to combine Curry with M. Sato and Matsuura et al. to obtain the invention of claim 7.

16. Regarding claim 8, Curry further discloses/teaches

- an image inputting section that is configured to scan an original and to input image data
[Fig. 1, numeral 12; Col. 3, lines 39-41]
- a printing section that is configured to print an image restored in said image processing apparatus
[Fig. 1, numeral 18]
- a communication section that is configured to transmit by facsimile an image on which facsimile transmission is instructed among images compressed in said image processing apparatus
[Col. 4, line 66 - Col. 5, line 5]

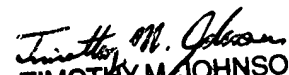
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yubin Hung whose telephone number is (703) 305-1896. The examiner can normally be reached on 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (703) 308-5246. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Yubin Hung
Patent Examiner
May 20, 2004


TIMOTHY M. JOHNSON
PRIMARY EXAMINER